# AUTHOR INDEX, VOLUME 31


A

Page

Abdelaziz, Abdelaziz H. . . . 552
Ahrens, William H. . . . 438
Akey, William C. . . . 247
Akinyemiju, O. A. . . . 775
Allard, R. W. . . . 652
Alt, Freddie L. . . . 401
Appleby, Arnold P. . . . 308, 861
Arntzen, Charles J. . . . 361
Asare-Boamah, Nana K. . . . 49
Ashley, Richard A. . . . 600
Ashton, Floyd M. . . . 43, 712

B

Babawi, Faiz F. . . . 552
Baker, John B. . . . 185
Balke, Nelson E. . . . 14, 293, 482
Bandeen, John D. . . . 461
Banks, Philip A. . . . 254, 351, 419, 628, 730
Barrett, Michael . . . 43, 712
Basler, Eddie . . . 271
Bauman, Thomas T. . . . 423
Beebe, Thomas F. . . . 215
Behrens, Richard . . . 693
Benjamin, Abraham . . . 819
Beste, C. Edward . . . 445
Beyers, Jan L. . . . 892
Bhatt, Prashant . . . 533
Böger, Peter . . . 338
Bouse, L. Fred . . . 639
Bovey, Rodney W. . . . 639, 807
Brewster, Bill D. . . . 861
Brown, Michael A. . . . 200
Bucholtz, Dennis L. . . . 159
Buhler, Douglas D. . . . 124, 163
Burnside, Orvin C. . . . 124, 163, 373, 610, 853
Burnside, Orvin D. . . . 840
Bush, Parshall B. . . . 543

C

Callahan, L. M. . . . 619
Camper, N. Dwight . . . 329
Carlson, David R. . . . 853
Carlson, Gerald A. . . . 604
Carlton, James B. . . . 639
Carter, C. H. . . . 63, 208, 236, 290
Carter, Lyle M. . . . 208, 236
Chandler, J. M. . . . 264, 303
Chow, Paul N.P. . . . 20
Cleary, Charles L. . . . 813
Cluff, Greg J. . . . 275
Cole, A. Wayne . . . 585
Cole, Darrell F. . . . 831
Collard, Ernest B. . . . 215
Collins, Fred C. . . . 436
Conn, Jeffery S. . . . 520
Connick, Jr., William J. . . . 333
Corbin, Frederick T. . . . 242
Cothren, Tom . . . 648
Cox, Terry I. . . . 472
Crowder, Scotty H. . . . 585
Cruz, Rolando T. . . . 410

D

Dawson, J. H. . . . 103, 465
Delapp, John A. . . . 520
Devine, Malcolm D. . . . 461
Devlin, Daniel L. . . . 790
Devlin, Robert M. . . . 109, 879
Dewey, Steven A. . . . 308
Dexter, Alan G. . . . 831
Dickman, D. I. . . . 775
Dimock, Edward J. . . . 215
Douglass, James E. . . . 543
Drawe, D. L. . . . 1
Duke, Stephen O. . . . 845
Duncan, Ronny R. . . . 254

E

Easton, E. Ford . . . 229, 727
Ebke, Duane H. . . . 866
Egley, G. H. . . . 264, 404
Elling, Laddie J. . . . 100
Ellis, Tamsey W. . . . 342
Elmore, C. Dennis . . . 93, 131, 200, 686
Evans, Raymond A. . . . 275

F

Fassuliotis, George . . . 533
Fletcher, Ronald A. . . . 49
Flint, Elizabeth P. . . . 193, 200, 318, 892
Foley, Mike E. . . . 76
Fong, Ivy E. . . . 664
Foy, Chester L. . . . 557, 597
Frank, J. Ray . . . 81, 445, 592
Frans, Robert E. . . . 436, 513, 648

G

Gawronski, Stanislaw W. . . . 525
Gealy, David R. . . . 226, 457
Genez, Andree L. . . . 56, 221
Ghafar, Zain . . . 572, 588
Gillespie, Greg R. . . . 500, 658
Goss, John R. . . . 361

H

Haderlie, Lloyd C. . . . 674
Halling, Blaik P. . . . 693
Hamilton, W. T. . . . 355, 634
Harrison, Jr., Howard F. . . . 259, 533
Harrison, Steve A. . . . 700
Harzler, Robert G. . . . 557, 597
Hatzios, Kriton K. . . . 280, 857
Heatherly, Larry G. . . . 93
Hein, Jr., Hugo . . . 807
Herman, Nancy D. . . . 567
Herzlinger, Geza . . . 170
Hess, F. Dan . . . 159
Hill, James E. . . . 652
Hoagland, Robert E. . . . 845
Hodgson, Richard H. . . . 396, 431
Holt, Jodie S. . . . 112
Horowitz, Menashe . . . 170
Horton, Diana K. . . . 648
Hsiao, Andrew I. . . . 763

J

Jacoby, Pete W. . . . 681
James, Trevor K. . . . 783
Janssen, Keith A. . . . 342
Johnson, B. J. . . . 385, 415, 707, 771, 883
Johnsen, Jr., Thomas N. . . . 315
Jones, Robert J. . . . 720

K

Kapusta, George. . . . 23
Karczmarczyk, Stanislaw J. . . . 109, 879
Keeley, P. E. . . . 63, 180, 803, 837
Khalifa, Mustafa A. . . . 840
Khan, Anwar A. . . . 153, 299
Khodayari, Khosro . . . 436
Kleifeld, Yeshaiahu . . . 450
Klingman, Dayton L. . . . 825
Koch, D. W. . . . 391
Koskinen, William C. . . . 504, 744
Kozak, Josef . . . 368
Krupinsky, Joseph M. . . . 86

L

Lauridson, Thomas C. . . . 674
Leather, Gerald R. . . . 37
Leavitt, R. A. . . . 775
Leavitt, Robert C. . . . 610
Lehle, Fredric R. . . . 28, 513
Lembi, Carole A. . . . 899
Lorenz, Russell J. . . . 86
Lowry, Stephen R. . . . 610

Mc

McCarty, Melvin K. . . . 866
McClelland, Marilyn . . . 513, 700
McGraw, Robert L. . . . 100
McKersie, Bryan D. . . . 461

M

Malkin, Shmuel . . . 450
Mann, Richard K. . . . 324
Mapplebeck, L. . . . 8
Marra, Michele C. . . . 604
Martin, Alex R. . . . 137, 187
Martin, Richard D. . . . 315
Mascianica, Martin P. . . . 342
Mayeux, Jr., H. S. . . . 355, 380
Meadors, Cecil H. . . . 681
Meggitt, William F. . . . 68, 752
Meredith, Jr., William R. . . . 303
Metzger, James D. . . . 285
Meyer, Robert E. . . . 639, 807
Miller, J. H. . . . 63, 208, 236, 290
Miller, Stephen D. . . . 500, 658
Monaco, Thomas J. . . . 56, 221, 567
Moody, Keith . . . 410
Moomaw, Russell S. . . . 137
Moreland, Donald E. . . . 763
Morrison, Ian N. . . . 247
Morrow, Larry A. . . . 226
Moshier, Loren J. . . . 790
Mowers, Ronald P. . . . 796
Mueller-Warrant, G. W. . . . 391
Mumma, Ralph O. . . . 537
Murkowski, Antoni J. . . . 879
Murray, Don S. . . . 271
Murray, J. Jack . . . 825
Mutz, J. L. . . . 1

N

Nafziger, Emerson D. . . . 76, 874
Nash, Ralph G. . . . 825
Neary, Daniel G. . . . 543
Nelson, James E. . . . 68, 752
Nemec, Stan . . . 427
Norris, Robert F. . . . 664

O

Obrigawitch, Tim . . . 187
Oelke, Ervin A. . . . 562, 766
Oliver, Lawrence R. . . . 700
O'Neal, Steven W. . . . 899
O'Sullivan, P. Ashley . . . 889
O'Toole, John C. . . . 410
Overton, J. R. . . . 619

P

Patterson, David T. . . . 193, 318, 892
Paul, Rex N. . . . 131, 686
Peeper, Thomas F. . . . 813
Penner, Donald . . . 68, 752
Peschken, Diether P. . . . 740
Petersen, Joseph L. . . . 735
Potter, Robert L. . . . 735
Price, Steven C. . . . 652
Price, Thomas P. . . . 14, 482
Prosch, S. D. . . . 23

R

Radosevich, Steven R. . . . 112
Rahman, Anis . . . 783
Ransom, Joel K. . . . 562, 766
Reece, Patrick E. . . . 488
Regev, Yael . . . 170, 450
Reichard, Donald L. . . . 779
Retzinger, Jr., E. James . . . 796
Richard, Jr., Edward P. . . . 361, 672
Roeth, Fred W. . . . 187, 373
Rogers, R. Larry . . . 796
Ross, Merrill A. . . . 423
Rosser, Steven W. . . . 324
Roundy, Bruce A. . . . 275
Rubin, Baruch. . . . 819
Russ, Oliver G. . . . 790

S

Saghir, A. R. . . . 465
Samimy, Cyrus . . . 153, 299
Sanders, W. L. . . . 619
Sandmann, Gerhard. . . . 338
Savage, Ken E. . . . 744
Schroeder, Galen L. . . . 831
Schubert, Oscar E. . . . 401
Schweizer, Edward E. . . . 5
Scrifres, C. J. . . . 1, 634
Shea, Patrick J. . . . 347, 528
Sheets, T. Jack . . . 567
Sherman, Mary E. . . . 622
Shettel, Nancy L. . . . 293
Skórska, Elżbieta M. . . . 879

Slife, Fred W. . . . . 76, 259, 361, 457, 801, 874
Smith, Albert E. . . . . 88
Smith, Jr., Roy J. . . . . 120
Snyder, Robert H. . . . . 431
Soteres, John K. . . . . 271
Spalding, Roy F. . . . . 610
Spence, Colin B. . . . . 472
Stahlman, Philip W. . . . . 790
Staniforth, David W. . . . . 28
Sterrett, John P. . . . . 396, 431
Stevens, LeRoy P. . . . . 401
Stewart, Cecil R. . . . . 28
Stoller, E. W. . . . . 148, 438
Street, Joe E. . . . . 672
Sultemeier, George W. . . . . 143
Swisher, Beth A. . . . . 242

T

Talbert, David M. . . . . 329
Tan, Chin S. . . . . 476
Teasdale, John R. . . . . 81, 232, 592
Thimijan, Richard W. . . . . 232
Thomas, A. Gordon. . . . . 740
Thompson, Jr., Lafayette . . . . . 622
Thullen, R. J. . . . . 63, 180, 803, 837
Triplett, Glover B. . . . . 779
Tripp, Timothy N. . . . . 628
Tucker, David . . . . . 427

U

Ueckert, Darrell N. . . . . 143, 735

V

Vavrina, Charles S. . . . . 600

W

Waldrop, David D. . . . . 351, 730
Walker, H. Lynn. . . . . 333
Watson, Alan K. . . . . 572, 588
Watson, Vance H. . . . . 585
Wauchope, R. Don . . . . . 504, 744
Wax, Loyd M. . . . . 76
Waywell, C. . . . . 8
Weaver, Susan E. . . . . 476
Weber, Jerome B. . . . . 347, 368, 528
Wehtje, Glenn R. . . . . 610
Whatley, Laura L. . . . . 801
Whisenant, Steven G. . . . . 143
Whitson, R. E. . . . . 1
Wicks, Gail A. . . . . 373, 493
Wilkinson, Robert E. . . . . 622
Wilson, Henry P. . . . . 342
Wilson, Jr., Robert G. . . . . 137, 488, 493, 674
Wise, Robin F. . . . . 740
Witt, William W. . . . . 324
Wittmuss, Howard D. . . . . 840
Woolley, Joseph T. . . . . 148
Woolson, Edwin A. . . . . 825
Worsham, Douglas A. . . . . 763
Wyse, Donald L. . . . . 100, 720, 766

Y

Yang, Yaw-Shing . . . . . 857
Young, Frank L. . . . . 720
Young, James A. . . . . 275

Z

Zama, Paul. . . . . 537
Zbieć, Irene I. . . . . 109, 897

# SUBJECT INDEX, VOLUME 31


A

Page

Absorption . . . 461, 483
Absorption-desorption equilibra . . . 744
ABUTH . . . 483, 853, 857, 892
*Abutilon theophrasti* . . . 14, 200, 482, 853, 857, 892
Acer rubrum . . . 431
Acetanilide herbicides . . . 790
Acetochlor . . . 790
Acifluorfen . . . 351, 592, 597, 628, 672
Activation . . . 109
Additive interactions . . . 351
Adsorption . . . 504, 528
Adsorption constants . . . 368
Adsorption-desorption equilibria . . . 504
Adsorption isotherms . . . 368
Adsorption, soils . . . 504
Adsorption, herbicides in soils . . . 368, 504
Afterripening . . . 700
*Agropbron repens* . . . 391, 461, 520, 720
AGRRE . . . 461, 720
Air pollutant . . . 280, 857
Alachlor . . . 567, 600, 790, 813
Alfalfa . . . 103, 391, 465
*Alisma triviale* . . . 562, 766
Allelopathic chemicals . . . 293
Allelopathy . . . 37, 131, 293, 513
ALSPA . . . 562
*Alternaria* . . . 86
Altitude effects . . . 315
Amaranth, spiny . . . 410
*Amarantbus hydridus* . . . 193, 438, 604, 752
*Amarantbus retroflexus* . . . 208, 290, 293
*Amarantbus spinosus* . . . 410
AMARE . . . 752
AMASP . . . 410
Ambimobile . . . 308
*Ambrosia artemesiifolia* . . . 299, 604
Ammonia-lyase activity . . . 845
*Ankistrodesmus* . . . 899
Annual weeds . . . 170
*Anoda cristata* . . . 303, 892
Anoda, spurred . . . 303, 892
Antagonism . . . 351, 597, 857, 889
Anthocyanin . . . 49
Antidote . . . 790
Antioxidant . . . 280
ANVCR . . . 892
Apoplast . . . 308
Applicator, controlled drop . . . 472
Aquifer conditions . . . 610
*Arachis hypogaea* . . . 259
Assimilate translocation . . . 308
Assimilation, net . . . 438
Atomizer . . . 779
ATP Levels . . . 76
Atrazine . . . 14, 88, 137, 215, 361, 423, 450, 482, 504, 610, 664, 879
Atrazine persistence . . . 355
Auxin activity assay . . . 801
Auxin antagonist . . . 436
AVEBA . . . 652
AVEFA . . . 652, 889
*Avena barbata* . . . 652
*Avena fatua* . . . 20, 226, 247, 285, 652, 693, 889
*Avena sativa* . . . 483, 664, 853

B

Bahiagrass . . . 88
Band application . . . 208
Barban . . . 652, 889
Barley . . . 63
Barley, foxtail . . . 520
Barley, volunteer . . . 20
Barnyardgrass . . . 208
BAS 9052 . . . 457, 465, 628, 796
BAS 9052 OH . . . 49, 557, 597, 857
Basal bulb formation . . . 148
BayMet 1486 . . . 639
Bean . . . 396, 431
Bean, Black Valentine . . . 396
Bean, kidney . . . 664
Bean, lima . . . 592
Bean, snap . . . 81, 592
Bensulide . . . 415
Bentazon . . . 232, 396, 597, 628
Benzothiazole . . . 801
Bermudagrass . . . 385, 415, 585, 619, 707, 771, 883
*Beta vulgaris* . . . 5, 493, 831
Bioassay . . . 347, 861
Biological assay . . . 8, 347
Biomass partitioning . . . 318
Biotypes . . . 112
Birdsfoottrefoil . . . 100
Bleaching activity . . . 338
Bluegrass, annual . . . 385
Bluegrass, Kentucky . . . 825
*Brachypodium distachyon* . . . 450
Brassica baber . . . 285
*Brassica campestris* . . . 740
*Brassica napus* . . . 740
Bromacil . . . 427, 819
Bromoxynil . . . 652
Broomweed, false . . . 380
Brush canopy effects . . . 1
Brush control . . . 681
Buds, vegetative . . . 324
Buffelgrass . . . 355, 634
Buffer effects . . . 528
Burial depth . . . 562
Buthidazole . . . 639, 879
Butylate . . . 187

C

$C_3$ weeds . . . 193
$C_4$ weeds . . . 193, 686
Caffeine . . . 293
Calcium . . . 342
Calli, tomato . . . 533
Callus tissue . . . 533
Callus tissue, soybean . . . 537
Canopy . . . 81
Canopy temperature . . . 472
Carbamate insecticides . . . 730
Carbohydrate, nonstructural . . . 874
$^{14}$Carbon . . . 159
*Carduus nutans* . . . 488
Carrier volume . . . 124, 163
Cartenoids . . . 109
Caryopses . . . 28
CASOB . . . 622
*Cassia obtusifolia* . . . 351, 622
CDA . . . 472
Cell culture . . . 242
*Cenchrus ciliaris* . . . 355, 634

CGA-15646 . . . 368
CGA 43089 . . . 280, 373, 790
CGA 82725 . . . 557, 628
CGA 92194 . . . 790
Chamaesyce . . . 131
*Chenopodium album* . . . 5, 520
Chickweed . . . 520
Chickweed, common . . . 771
Chloracetamide . . . 419
Chloracetanilide . . . 373
Chloracetanilide herbicide . . . 373
Chlorbromuron . . . 368
Chlorella vulgaris . . . 879
Chlorophyll . . . 49, 109, 347
Chloroplast . . . 693
Chlorsulfuron . . . 857, 861
Chromate . . . 329
Chromatography . . . 8
*Chrysothamnus nauseosus* . . . 275
CIRAR . . . 488
*Cirsium arvense* . . . 396, 488, 674
Citrus . . . 427
*Cladophora* . . . 899
Clay adsorption . . . 528
Clover, alsike . . . 100
Clover, red . . . 100
$CO_2$ exchange . . . 461
$CO_2$ fixation . . . 438
Cocklebur . . . 76, 193
Cocklebur, common . . . 604, 874
Collection date . . . 271
Combustion apparatus . . . 159
Competition . . . 438, 476, 493
Competition effects on growth . . . 892
Competition, plant . . . 1, 5, 193, 200, 236, 303, 572, 588
Competition, weed and cotton . . . 303
Competitiveness . . . 438
Conifer . . . 215
Conjugates, amino acid . . . 537
Conservation tillage . . . 355, 423, 840, 853
Controlled release . . . 333
Conventional tillage . . . 423
Corn . . . 43, 49, 137, 293, 457, 572, 588, 610, 664, 712
Corn, sweet . . . 342
Cotton . . . 63, 200, 208, 290, 303, 513, 803, 892
Cotton, irrigated . . . 290
Cotton stand . . . 236
Cotton yield . . . 236
Crabgrass . . . 200, 410, 513, 557, 619, 825
Crabgrass, large . . . 597, 883
Crop injury . . . 672
Crop protectant . . . 373
Crop rotation . . . 853
Cropping systems . . . 63
*Croton capitatus* . . . 585
*Croton, woolly* . . . 585
CRUNU . . . 488
Cucumber . . . 221, 232
*Cucumis sativus* . . . 56, 221, 232
*Cucurbita texana* . . . 700
Cultivar(s) . . . 303, 533, 552
Cultivar tolerance . . . 56, 88
Cultivars, cotton . . . 303
*Cuscuta* ssp . . . 465
Cyanazine . . . 813
*Cyanchum laeve* . . . 271
CYNCP . . . 585
CYNDA . . . 385, 585, 619, 771
*Cynodon dactylon* . . . 385, 415, 585, 619, 707, 771, 883
*Cyperus esculentus* . . . 63, 148, 572, 588, 803
*Cyperus rotundus* . . . 200
CYPES . . . 419, 572
*Cypes esculentes* . . . 419
Cytological effects . . . 49

D

2,4-D . . . 271, 275, 324, 355, 537, 766, 771, 831, 889
2,4-D conjugates . . . 537
2,4-DB . . . 351
Dalapon . . . 100, 215, 707
Dallisgrass . . . 585
Dandelion, common . . . 825
DATST . . . 445
Datura, stramonium . . . 445
Day length . . . 342
DCPA . . . 465
Deltapine 16 . . . 303
Density gradient analysis . . . 664
DES 21326-04 . . . 303
Desorption . . . 504
Dicamba . . . 143, 271, 275, 355, 674, 681, 771, 831
Diclofop . . . 247, 436, 658, 889
Difenopenten . . . 457
Difenzoquat . . . 693, 889
Diffusion, herbicide . . . 482
Diffusive resistance . . . 874
*Digitaria sanguinalis* . . . 200, 513, 557, 597, 883
*Digitaria setigera* . . . 410
*Digitaria* ssp . . . 619, 825
DIGSA . . . 597, 883
DIGSP . . . 619
Diphenylether herbicides . . . 109
Directed herbicide . . . 137
Diuron . . . 361, 427, 504, 879
Dock, curly . . . 153, 285
Dodder . . . 465
Dogfennel . . . 585
D[illegible]ancy . . . 153, 229, 264, 299, 285
D[illegible]ble cropping . . . 254
Douglas fir . . . 215
Dowco 290 . . . 639
Dryland ice . . . 410

E

*Echinochloa crusgalli* . . . 208
Ecology, agricultural . . . 552
Economic loss . . . 740
Economic threshold model . . . 604
Ecosystem . . . 542
Electron transport . . . 361, 879
ELEIN . . . 410, 567
*Eleusine indica* . . . 410, 567
Embryo growth . . . 153
Emergence . . . 180, 380
Emergence depth . . . 23, 226
Endomycorrhiza . . . 427
Enrichment . . . 187
Enthalpy . . . 504
Entrophy . . . 504
Epronaz . . . 259
EPTC . . . 103, 187, 783, 819
*Equisetum arvense* . . . 520
*Ericameria austrotexana* . . . 380
Ethane formation . . . 338
Ethephon . . . 153
Ethofumesate . . . 385
Ethylene . . . 648
*Eupatorium capillifolium* . . . 585
EUPCP . . . 585

*Euphorbia agraria* . . . 866
*Euphorbia cyparissias* . . . 866
*Euphorbia esula* . . . 86, 866
*Euphorbia maculata* . . . 131
*Euphorbia nutans* . . . 131
*Euphorbia supina* . . . 131
*Euphorbia uralensis* . . . 866
*Euphorbia* × *pseudovirgata* . . . 866

F

Fertilizer, nitrogen . . . 488
*Festuca arundinacea* . . . 324
Field age . . . 520
Flamprop . . . 889
Flax . . . 20
Flower . . . 180
Fluchloralin . . . 208
Fluomenturon . . . 504
Fluorescence . . . 361, 450, 879
Fluorescence, herbicide effects . . . 361
Fluridone . . . 290, 347, 528, 819
Fluridone activity . . . 347
Fluridone persistence . . . 347
Foliage application . . . 351
Forage . . . 100
Forage quality . . . 585
Forage response . . . 735
Forage yield . . . 634
Forest watershed . . . 543
Foxtail, yellow . . . 28
*Fragaria* × *ananassa* . . . 56, 221
Fraxinum americana . . . 431
Freundlich equation . . . 504
Freundlich isotherm . . . 744
Fungi . . . 333, 427
Fungi, mycorrhyal . . . 427

G

GA 3 . . . 396
$GA_{4+7}$ . . . 153, 396
*Gaillardia pulchella* . . . 735
*Gaillardia, rosering* . . . 735
GAIPU . . . 735
*Galeopsis tetrabit* . . . 520
Gas chromotography . . . 807
Gasses, annual . . . 290
Genetic variability . . . 652
Genotypes . . . 525
Germination . . . 153, 170, 180, 226, 229, 264, 285, 299, 324
Germination advancement . . . 299
Germination stimulation . . . 763
Germination, weed seed . . . 324, 837
Gibberellic acid . . . 285
Gibberellin . . . 299
*Glycine max* . . . 23, 63, 93, 193, 242, 259, 318, 457, 537, 557, 592, 597, 604, 622, 628, 700, 720, 730, 752, 796, 845, 853
Glycoside . . . 221
Glyphosate . . . 76, 124, 271, 308, 391, 396, 461, 674, 707, 813, 845, 874
Glyphosate phytotoxicity . . . 163
Goldenrod . . . 56, 143, 221
Goldenrod, common . . . 380
Goldenweed, common . . . 355, 380
Goosegrass . . . 410
*Gossypium hirsutum* . . . 63, 200, 208, 236, 290, 303, 513, 803, 892
*Gourd, Texas* . . . 700
Grain sorghum . . . 254, 373, 552, 752, 790
Grass damage . . . 634
Grass herbicides . . . 557
Grass, perennial . . . 488
Grass production . . . 1, 634
Grass weeds, annual . . . 226
Greasewood . . . 275
Groundsel . . . 112
Growth . . . 318, 342, 438, 457, 476, 500
Growth analysis . . . 112, 193, 318, 892
Growth characteristics . . . 226
Growth differential . . . 112
Growth regulator(s) . . . 153, 242, 285, 299
Growth retardant . . . 431
Growth stage . . . 124, 628, 648, 672, 766
*Gutierrezia microcephala* . . . 380
*Gutierrezia sarothrae* . . . 380

H

H 26905 . . . 465
HELAN . . . 500
*Helianthus annuus* . . . 37, 500, 658
Hempnettle . . . 520
Herbicide absorption . . . 14, 43, 259, 271, 368, 528, 658, 674, 712, 766, 307
Herbicide accumulation . . . 482
Herbicide activity . . . 347
Herbicide additive interactions . . . 351
Herbicide antagonism . . . 351
Herbicide antidote . . . 280
Herbicide binding . . . 43
Herbicide, biological . . . 333
Herbicide breakdown . . . 187
Herbicide carrier . . . 163
Herbicide carryover . . . 853
Herbicide combinations . . . 20, 23, 137, 628
Herbicide compatability . . . 597
Herbicide degradation . . . 8, 14, 68, 88, 187, 259, 338, 610
Herbicide drift . . . 831
Herbicide edging treatments . . . 707
Herbicide effects . . . 329
Herbicide efflux . . . 14
Herbicide extender(s) . . . 187, 783
Herbicide fate . . . 610
Herbicide, foliar-applied . . . 628
Herbicide half-life . . . 347
Herbicide in seedling alfalfa . . . 391
Herbicide incorporation . . . 493, 840
Herbicide inhibition . . . 361
Herbicide injury . . . 103, 373
Herbicide/insecticide . . . 730
Herbicide/insecticide interactions . . . 730
Herbicide interactions . . . 20, 351, 597
Herbicide, irrigation effects . . . 752
Herbicide leaching . . . 610
Herbicide, mechanism of action . . . 76, 874
Herbicide metabolism . . . 8, 14, 221, 247, 259, 431, 482, 658, 712, 766, 775
Herbicide mixtures . . . 889
Herbicide mode of action . . . 845
Herbicide penetration . . . 43
Herbicide penetration and translocation . . . 247
Herbicide persistence . . . 187, 290, 347, 423, 783, 819, 861
Herbicide photodecomposition . . . 752
Herbicide, postplant directed . . . 137
Herbicide protectants . . . 790
Herbicide reaction . . . 652
Herbicide residues . . . 8, 68, 315, 347, 543, 825, 861
Herbicide resistance . . . 112, 652
Herbicide, selective . . . 100
Herbicide solubility . . . 744
Herbicide susceptibility . . . 525

Herbicide synergism . . . 351
Herbicide subsurface placement . . . 840
Herbicide tolerance . . . 56, 88, 100, 103, 557, 672, 707, 775
Herbicide toxicity . . . 124
Herbicide translocation . . . 308, 658, 674, 766, 775, 807
Herbicide uptake . . . 43, 712
Herbicides in soil . . . 744
Herbicides, postemergence . . . 124, 163
Herbicides, postemergence-directed . . . 622
Herbicides, rank-mixed . . . 883
Herbicides, soil-applied . . . 622
Herbicides, soil-incorporated . . . 819
Hexazinone . . . 215, 543, 639
Hill reaction . . . 450
*Hordeum jubatum* . . . 520
*Hordeum vulgare* . . . 20, 63
Hormone . . . 285
Horsetail . . . 520
Host specific . . . 552
HPLC . . . 221
Humidity . . . 500
Hydraulic nozzles . . . 779
Hydraulic post-driver . . . 401
Hydrophobic bond . . . 744
Hydroquinone . . . 293

I

Ice-encasement . . . 562
Incorporator . . . 208
Indole-3-acetic acid . . . 801
Indoleacetic acid . . . 648
Inhibitor, germination . . . 513
Inhibitors, metabolic . . . 14
Innoculum production . . . 333
Insecticide/herbicide interactions . . . 730
Insecticides, carbamate . . . 730
Interference . . . 200, 303
Intraspecific response . . . 658
*Ipomoea batatas* . . . 567
*Ipomoea bederacea* . . . 23, 837
*Ipomoea purpurea* . . . 308, 604
Ironweed biology . . . 324
Ironweed control . . . 324
Ironweed, tall . . . 324
Irrigated corn . . . 137
Irrigation . . . 93, 720
Irrigation effects on competition . . . 720
*Isocoma coronopifolia* . . . 380
*Isocoma wrightii* . . . 143

J

*Jaquemontia tamnifolia* . . . 727
Jimsonweed . . . 445
Johnsongrass . . . 242, 628, 796

K

Kaolonite . . . 528
KCHSC . . . 853
Kochia . . . 853
Kochia scoparia . . . 853
Kranz-$C_4$ photosynthesis . . . 131
Kranz anatomy . . . 686
Kranz syndrome . . . 131

L

Lambsquarters . . . 5, 520
Layby herbicide . . . 137
Leaf cells . . . 664
Leaf position . . . 271
Leaf water potential . . . 318, 410, 720
Ledipium virginicum . . . 853
Legume . . . 100
Leptochloa fascicularis . . . 120
LEPVI . . . 853
Light . . . 81, 112
Light activation . . . 109
Light, effect on phytotoxicity . . . 232
Light interactions . . . 899
Light reaction . . . 879
Ligustrum ovalifolium . . . 431
*Linum usitatissemum* . . . 20
Linuron . . . 8, 368
Lipid metabolism . . . 28
Lipid mobilization . . . 28
*Lipinus albris* . . . 513
Liposome leakage . . . 329
Liquid scintillation . . . 159
Live oak . . . 639
Lopine . . . 513
*Lotus corniculatus* . . . 100
Low-till . . . 853
*Lycopersicon esculentum* . . . 445, 476, 525, 533

M

MBR-18337 . . . 242, 431
Magnesium . . . 342
Meadow, subirrigated . . . 488
Mecocrop . . . 771
*Medicago sativa* . . . 103, 465
*Melocbia corcborifolia* . . . 229
Mesquite, honey . . . 681, 807
Metabolic inhibitors . . . 14
Metobromuron . . . 368
Metolachlor . . . 137, 254, 280, 342, 373, 730, 790
Metribuzin . . . 445, 525, 533, 730, 840
Metronome . . . 185
Microautoradiograph . . . 712
Microautoradiography . . . 664
Microbiological degradation . . . 783
Microorganisms, soil . . . 427
Milkweed, honeyvine . . . 271
Millet, foxtail . . . 752
Millet, proso . . . 293
Milo . . . 63
Mineral nutrients . . . 342
Minimum tillage . . . 391, 840, 853
Mitochondria . . . 693
Mitosis . . . 49
Model . . . 543
Moisture stress . . . 247
Moisture stress effects on thistle control . . . 674
MON-4606 . . . 790
Monolinuron . . . 368
Monosodium methanearsonate . . . 648
Montmorillonite . . . 528
Morningglory, ivyleaf . . . 837
Morningglory, smallflower . . . 727
Morningglory, tall . . . 308, 604
Movement of strigol . . . 763
MSMA . . . 648
Mustard, wild . . . 285
Mycoherbicides . . . 333

N

Napromine . . . 43
Napropamide . . . 415, 712
Nightshade, black . . . 180, 290
Nitrogen-fertilized turf . . . 825

Norflurazon . . . . . 109, 338
No-till . . . . . 355, 423
No-till systems and weed control . . . . . 813
No-till systems and wheat yield . . . . . 813
Nucleic acid synthesis . . . . . 76
Nutsedge . . . . . 200, 419
Nutsedge control . . . . . 63
Nutsedge regrowth . . . . . 419
Nutsedge tuber production . . . . . 419
Nutsedge, yellow . . . . . 63, 148, 418, 572, 588, 803
Nutrient accumulation . . . . . 342

O

Oat . . . . . 482, 664
Oat, wild . . . . . 20, 226, 247, 652, 693, 889
Off-site movement . . . . . 543
Oil adjuvants . . . . . 557
Organic matter adsorption . . . . . 528
Organophosphates . . . . . 730
*Oryza sativa* . . . . . 120, 410, 648, 672
Oryzalin . . . . . 68, 730, 813
Oryzalin, environmental effects . . . . . 752
Osmoconditioning . . . . . 299
Osmoregulation . . . . . 600
Osmotic potential . . . . . 600
Overseeded . . . . . 385
Overseeded turf . . . . . 385
Oxadiazon . . . . . 415
Oxyfluorfen . . . . . 109, 338
Ozone . . . . . 280
Ozone-herbicide interactions . . . . . 857

P

PANDI . . . . . 597, 853
*Panicum dichotomiflurum* . . . . . 853
Panicum, fall . . . . . 853
*Panicum miliaceum* . . . . . 293
Paraquat . . . . . 254, 391, 427, 707
Paraquat efficacy . . . . . 779
Parasitic plants . . . . . 763
PASDI . . . . . 585
*Paspalum dilatatum* . . . . . 585
Paspalum notatum . . . . . 88
Pastures . . . . . 585
Peanut . . . . . 259
Peas . . . . . 592
PEG uptake . . . . . 600
Pendamethalin . . . . . 68, 137, 208, 254
Pennycress, field . . . . . 285
Pepperweed, Virginia . . . . . 853
Perfluidone . . . . . 419
Permeability . . . . . 329
Permeability, membrane . . . . . 329
Persistence . . . . . 187
PESCI . . . . . 634
pH effects . . . . . 528
Phacelia tanacetifolia . . . . . 285
Phacelia, tansy . . . . . 285
*Phaseolus lunatus* . . . . . 592
*Phaseolus vulgaris* . . . . . 81, 396, 431, 592, 664
Phenolic acids . . . . . 293
Phenolic deposits . . . . . 131
Phenylalanine . . . . . 845
Phenylpropanoid . . . . . 845
Phenylurea herbicides . . . . . 368
Phloem transport . . . . . 807
Photodecomposition . . . . . 315
Photodecomposition, altitude effects . . . . . 315
Photomorphogenesis . . . . . 148
Photoperiod . . . . . 700
Photosynthesis . . . . . 318, 361, 457, 461, 686, 693, 879, 899
Phosphatidylcholine . . . . . 329
Phosphorus . . . . . 342
Photosynthetic electron transport inhibition . . . . . 361
Photosynthetic inhibitors . . . . . 845
Physiological effects . . . . . 49
Physiological response to herbicides . . . . . 845
Phytochrome . . . . . 148
Phytotoxicity . . . . . 88, 232, 445
Picloram . . . . . 143, 275, 315, 355, 639, 674, 681, 831, 889
Picloram disappearance . . . . . 315
Pigweed . . . . . 193, 208, 752
Pigweed, redroot . . . . . 290, 293
Pigweed, smooth . . . . . 438, 604
*Pinus ponderosa* . . . . . 215
*Piperonyl butoxide* . . . . . 280
*Pisum sativum* . . . . . 592, 801
*Pithophlora* . . . . . 899
Plant growth . . . . . 293, 342
Plant hormones . . . . . 648
Plant parasite . . . . . 552
Plant populations . . . . . 652
Plant residue, alachlor . . . . . 567
Plant tissue analysis . . . . . 720
Plant variation . . . . . 866
Planter . . . . . 208
Planting date . . . . . 180
Planting depth . . . . . 229, 700
Plastic cover . . . . . 170
Plastid . . . . . 450
POAAN . . . . . 385
*Poa annua* . . . . . 385
*Poa pratensis* . . . . . 825
Polyethylene glycol . . . . . 299
*Polygonum pensylvanicum* . . . . . 520, 604
Ponderosa pine . . . . . 215
Population dynamics . . . . . 552
*Populus* tolerance to simazine . . . . . 775
POROL . . . . . 567
*Portulaca oleracea* . . . . . 567
Postemergence . . . . . 436, 493
Postluminescence . . . . . 879
Potassium . . . . . 342
Potato . . . . . 482
Potato, sweet . . . . . 567
PP-009 . . . . . 465, 628, 857
PPG 844 . . . . . 427
Prairie, coastal . . . . . 1
Preemergence . . . . . 493, 592
Preplant . . . . . 493
Profluralin . . . . . 208
Prometryne . . . . . 208
Pronamide . . . . . 391
Propachlor . . . . . 790
Propyl gallate . . . . . 280
*Prosopis juliflora* var. *glandulosa* . . . . . 681, 807
Prosulfalin . . . . . 415
Protein synthesis . . . . . 76
Protoplast . . . . . 693
*Pseudotsuga menziesii* . . . . . 215
PSII fluorescence . . . . . 450
Putting green . . . . . 385, 415
Pyridinone . . . . . 419

Q

Quackgrass . . . . . 391, 461, 520, 720
*Quercus rubra* . . . . . 537
*Quercus virginiana* . . . . . 639
QUEVM . . . . . 639

R

R-25788 . . . 783
R-33865 . . . 187
Radioactive sample preparation . . . 159
Ragweed, common . . . 299, 604
Rainfall . . . 1, 592
Range ecology . . . 1
Range improvement . . . 1
Range management . . . 634
Rangeland(s) . . . 1, 143, 315, 735
Rapeseed . . . 740
Ratoon-cropped grain sorghum . . . 254
Rayless goldenrod . . . 143
Red oak . . . 533, 537
Redweed . . . 229
Reforestation . . . 215
Regrowth . . . 324
Replacement series . . . 200
Residual activity . . . 347
Residue(s) . . . 537, 543
Resistance . . . 450
Resource allocation . . . 112
Respiration . . . 49, 693
RH-8817 . . . 109
Rice . . . 410, 648, 672
Rice metabolism . . . 648
Rice straighthead . . . 648
Rice, wild . . . 120, 562
Rice yield . . . 648
RO 13-8895 . . . 465, 557
Root leakage . . . 600
Root tissue . . . 43, 76
Root uptake . . . 600
Rotary atomizers . . . 779
Rotor speeds . . . 472
Row spacing . . . 81, 236
*Rumex crispus* . . . 153, 285
Runoff . . . 543
Ryegrass . . . 436

S

$^{35}$S-sulfolipid degradation . . . 338
SA-77 . . . 271
Safener crop . . . 280
Salt rabbitbrush . . . 275
Sampling, pipe . . . 401
Sampling soil . . . 401
*Sarcobatus vermiculatus* . . . 275
Scarification . . . 229
Season-long weed control . . . 137
SEBEX . . . 672
Seed . . . 153, 170, 180
Seed coats . . . 264
Seed dormancy . . . 264, 727
Seed germination . . . 28, 37, 103, 153, 170, 180, 226, 229, 404, 410, 727, 837
Seed longevity . . . 264
Seed placement . . . 380
Seed placement effects on seedling emergence . . . 380
Seed production . . . 100, 837
Seed safener . . . 373
Seed scarification . . . 727, 837
Seed, undeveloped . . . 226
Seed viability . . . 264
Seedling, alfalfa . . . 391
Seed weight . . . 93
Seedling emergence . . . 380
Seedling growth . . . 37
Seedling reduction with soil solarization . . . 404
*Senecio vulgaris* . . . 112
*Sesbania exalta* . . . 672
Sesbania, hemp . . . 672
*Setaria lutescens* . . . 28
SETIT . . . 752
SETVE . . . 752
Sicklepod . . . 351, 622
Sida . . . 200
*Sida spinosa* . . . 200
Silvex . . . 275
Simazine . . . 775, 899
Simazine metabolism . . . 775
Simazine translocation . . . 775
Simazine uptake . . . 775
Sink, artificial . . . 308
Site preparation . . . 215
Smartweed . . . 520
Smartweed, Pennsylvania . . . 604
SN 533 . . . 259
Snakeweed, broom . . . 380
Snakeweed, threadleaf . . . 380
Sodium alginate . . . 333
Soil atmosphere . . . 170
Soil collection equipment . . . 401
Soil incorporation . . . 290
Soil moisture . . . 404, 700
Soil organic matter . . . 744
Soil pH . . . 347
Soil residue, alachlor . . . 567
Soil samples . . . 401
Soil solarization . . . 404
Soil solarization with transparent plastic . . . 404
Soil sterilization . . . 68
Soil temperature . . . 404
Soil texture . . . 380
Soil texture effects on seedling emergence . . . 380
Soils . . . 68, 187, 368
Soils and herbicide breakdown . . . 8
*Solanum nigrum* . . . 180, 290
*Solanum tuberosum* . . . 63, 482
Solar heating of soil for weed control . . . 819
Solarization . . . 170
*Solidago fistulosa* . . . 56, 221
SONAR . . . 740
*Sonchus arvensis* . . . 740
Sorghum . . . 280, 513, 857
*Sorghum bicolor* . . . 63, 254, 280, 373, 513, 552, 752, 790, 857
*Sorghum halepense* . . . 242, 628, 796
Sorghum injury . . . 373
SORHA . . . 628
Sowthistle, perennial . . . 740
Soybean . . . 23, 63, 93, 193, 242, 259, 318, 457, 513, 533, 537, 557, 592, 597, 604, 622, 628, 700, 720, 730, 752, 796, 845, 853
Soybean weeds . . . 604
Speed control . . . 185
Speed regulator . . . 185
*Spirogyra* . . . 899
Sprangletop . . . 120
Spray components effects . . . 124
Spray, directed . . . 445
Spray drift . . . 831
Spray interception . . . 766
Spray volume . . . 779
Sprayer, operator-controlled . . . 185
Sprayer, plot . . . 185
Spurge . . . 131
Spurge, leafy . . . 86, 866
Spurge, prostrate . . . 131
Spurge, spotted . . . 131
*Stellaria media* . . . 520, 771
STEME . . . 771
*Stipa leucotricha* . . . 735

Stomatol conductance . . . 476
Stomatal resistance . . . 318
Stoneville 213 . . . 303
Stormflow . . . 543
Straight growth test . . . 801
Strawberry . . . 56, 221
S-triazines . . . 254
*Striga bermontbica* . . . 552
Strigol degradation . . . 763
Strigol leaching . . . 763
STRLU . . . 763
Substituted phthalamides . . . 285
Sugars . . . 49
Sugarbeet(s) . . . 5, 493, 831
Sugarbeet storage losses . . . 831
Sunflower . . . 37, 500, 658
Sunlight . . . 315
Surfactant . . . 124, 271
Symplast . . . 308
Synergism . . . 351, 857

T

2,4,5-T . . . 639, 681
*Taraxacum officinale* . . . 825
TCA . . . 100
Tebuthiuron . . . 143, 355, 585, 634, 639
Temperature . . . 229, 500, 592, 658
Temperature effects . . . 170, 193
Temperature effects on growth . . . 892
Temperature, effect on phytotoxicity . . . 232
Terbacil . . . 56, 221
Thermodynamics . . . 744
Thermomorphogenesis . . . 148
Thiocarbamate(s) . . . 187, 419, 783
Thistle, Canada . . . 396, 488, 674
Thistle, musk . . . 488
Tifdwarf . . . 415
Tillage, reduced . . . 93, 124, 840
Tillage systems . . . 355, 423
Tissue aging . . . 14
Tissue culture . . . 242, 533
Tissue oxidizer . . . 159
*Thlaspi arvense* . . . 285
Tolerance mechanism . . . 775
Tomato . . . 445, 476, 525, 533
Tomato cultivar . . . 525
Tomato tolerance . . . 525
Toxaphene . . . 351, 622
Toxic plants . . . 143
*Trachynia distachya* . . . 450
Translocation . . . 308, 431, 461
Triacylglyceride . . . 28
Triazine herbicides . . . 88, 112
Triazine resistant . . . 438, 450
Triazine susceptible . . . 438, 450
Triazinone . . . 525
Triclopyr . . . 275, 324, 639, 681
Triclopyr amine . . . 807
Triclopyr ester . . . 807
Trifluralin . . . 68, 208, 427, 840
*Trifolium hybridum* . . . 100
*Trifolium pratense* . . . 100
*Triticum aestivum* . . . 20, 436, 693, 813, 861
Tritium . . . 159
Tube size . . . 572
Tuber number . . . 588
Tuber production . . . 419
Tuber size . . . 588
Turf . . . 385
Turf quality . . . 825
Turf weeds . . . 883
Turfgrass tolerance . . . 771
Turfgrass winter survival . . . 771

U

UBI-S-734 . . . 419
Ultrastructure . . . 28
Ultraviolet light . . . 315
Ultraviolet photodecomposition . . . 315
Untilled weedy seedbed . . . 93

V

Velvetleaf . . . 14, 200, 482, 853, 857, 892
Vernolate . . . 187, 622, 819
*Vernonia altissima* . . . 324

W

Water depth . . . 562
Water hardness . . . 163
Waterplantain . . . 562
Waterplantain, common . . . 766
Water potential . . . 153, 247, 410
Water quality . . . 163
Water relations . . . 318, 600
Weed biology . . . 120, 324
Weed competition . . . 81, 120, 740
Weed competition and yield . . . 803
Weed control . . . 137, 290, 324, 763
Weed control, biological . . . 333
Weed control by solarization . . . 170
Weed control systems . . . 93
Weed control with fire . . . 355
Weed ecology . . . 520
Weed-free period . . . 803
Weed interference . . . 120
Weed losses . . . 5
Weed management . . . 236
Weed management, integrated . . . 572, 588
Weed nursery . . . 866
Weed seed(s) . . . 180, 264, 285, 299, 404
Weed seed emergence . . . 727
Weed seed production . . . 837
Weed seedling . . . 404
Weed shifts . . . 520
Weed survey . . . 740
Weed thresholds . . . 5
Weed yield . . . 93
Wheat . . . 20, 436, 693, 861
Winter wheat . . . 813
Witchweed . . . 552
Woody ornamentals . . . 707

X

XANPE . . . 874
*Xanthium pensylvanicum* . . . 76, 193, 604
Xylem pressure . . . 476
Xylem transport . . . 807

Y

Yield(s) . . . 303, 436

Z

*Zea mays* . . . 43, 49, 137, 293, 457, 572, 588, 610, 664, 712, 783
*Zea mays saccharata* . . . 342
*Zizania palustris* . . . 562